for the flow of the gases. In analyzing each of these furnaces, the research has been concerned with the principal dimensions. It has been found in the course of this work that, in many furnaces, the dimensions which seemed to be the least important have the most important effect, and conversely, that those to which great importance had been attached were of no significance.

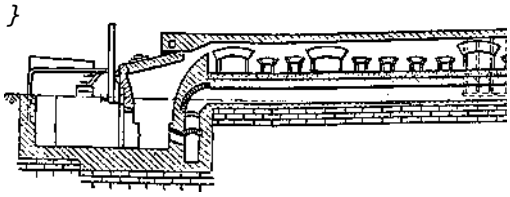

FIG. 27.—Furnace N.

It is also clearly apparent that these methods make it possible to regulate accurately the quantity of fuel consumed and diminish it accordingly, in many cases, by slight corrections applied to the furnace.

As an example of the method of computation and of its impor-

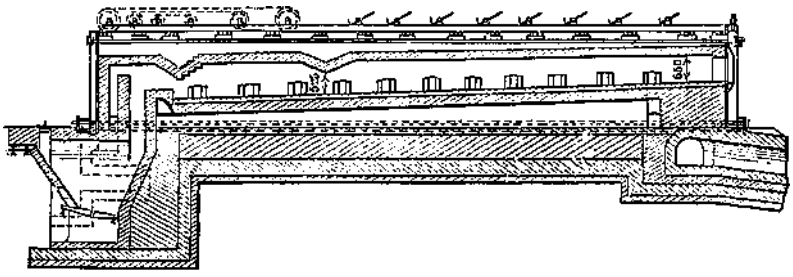

FIG. 28.—Lyswa Furnace.

tance, the calculations are presented for a continuous heating furnace in the N *M* works, using a very good grade of English coal,

and a similar furnace at the Lyswa works (Oural), using a coal from the Kis61ow mines, having 25 per cent of cinders or ash and 3 per cent of sulphur. The defects in these furnaces and the methods used in improving them were plainly shown by these computations. *(Refer to* Fz^s. 27 *and* 28.) *Computations tabulated on page* 45.)

It may be seen, from the computations for "the furnace *N*

(1) A large Russian Works.